DURHAM
1869
CITY OF MEDICINE

CITY OF DURHAM | NORTH CAROLINA

Date: February 16, 2016

To: Thomas J. Bonfield – City Manager
Through: W. Bowman Ferguson – Deputy City Manager
From: Marvin G. Williams – Director of Public Works
Subject: Small Scale Residential Stormwater Control Measures in Durham

Executive Summary

The City of Durham is required to achieve significant reductions in levels of nitrogen and phosphorous being discharged into Falls Lake from existing development as part of the Falls Lake Nutrient Management Strategy. The City's multi-faceted approach to these nutrient reduction requirements integrates innovative technologies such as the Algal Turf Scrubber®, large stormwater control measures such as the South Ellerbe Creek Wetland, nutrient banks, existing projects, and Green Infrastructure practices. Green infrastructure uses plants, soils, and nature itself to manage stormwater runoff. This approach emphasizes infiltration, evapotranspiration (uptake of water by plants), and reuse. The goal of green infrastructure is to mimic the natural hydrologic function of the watershed. This project will build off the successes of previous pilot projects to develop a systematic approach to identify residential locations throughout the city to install rain gardens, cisterns, and downspout disconnections. Work will involve public outreach and education, monitoring of existing devices, development of bid documents and construction management for up to 50 small scale residential SCMs, as well as the development of a maintenance and monitoring process.

Requests for qualifications were solicited for professional services for the implementation of small-scale, green infrastructure-type, stormwater control measures in residential neighborhoods throughout the City. Four responses were received. The responses included Biohabitats, Inc. teamed with Ellerbe Creek Watershed Association and RK&K; Kris Bass Engineering teamed with Ellerbe Creek Watershed Association, North Carolina State University Water Resources Research Institute, Dragonfly Pond Works, and Anne Spafford; McAdams Company teamed with Hazen and Sawyer and PEQ, Inc.; Durham Soil and Water Conservation District teamed with Durham Public Schools – The Hub Farm, Ellerbe Creek Watershed Association, Eno River Association, and Northeast Creek Streamwatch. A committee of five people used the objective evaluation criteria contained in the request for qualifications to review and score the proposals. The evaluation criteria include understanding of the project, methodology used for the project, project management, and experience and qualifications. Based on the review of the proposals, the evaluation resulted in a ranking of proposals with the Biohabitats, Inc. team and the Kris Bass Engineering team tied for first followed by the McAdams Company team and the Durham Soil and Water Conservation District team. The top two teams were interviewed by the evaluation committee. Based on interviews with these two teams, Biohabitats, Inc. and their team were selected to develop a scope for the project.

Recommendation

The Administration recommends that the City Council:

1. Authorize the City Manager to execute a contract with Biohabitats, Inc. for the implementation of small scale residential stormwater control measures in the amount of $132,882;

2. Establish a contingency fund in the amount of $13,288; and

3. Authorize the City Manager to negotiate change orders provided that the cost of all change orders and the contract does not exceed the total project cost of $146,170.

Background

The Stormwater and GIS Services Division is responsible for ensuring that the City of Durham is meeting water quality regulations and helping to improve the health of local waterways. The City's Strategic Plan identifies stewardship of the city's physical and environmental assets as a crucial element for maintaining adequate infrastructure to support quality of life and serve as a foundation for a healthy economy. In addition, the Strategic Plan of the Department of Public Works recognizes that green infrastructure is an opportunity to provide engineering and environmental services to build and maintain a sustainable stormwater system that is able to meet federal, state, and local regulatory requirements into the future.

The Falls Lake Nutrient Management Strategy requires that the City achieve reductions in the amount of nitrogen and phosphorus (i.e. nutrients) being discharged into Falls Lake from existing development. The City uses an integrated approach to address these requirements and improve the health of local waterways. This includes treating stormwater from existing development with large projects such as the South Ellerbe Wetland, by exploring innovative technology like the Algal Turf Scrubber ®, through participation in regional groups such as the Upper Neuse River Basin Association (UNRBA), by coordination with other City projects, and through implementation of green infrastructure projects.

Green infrastructure is a type of stormwater management that tries to protect, restore, or mimic the natural water cycle. Plants, soil, and natural ecological processes manage stormwater where it falls, instead of piping it downstream. The city's award-winning Rain Catchers pilot program focused installation and monitoring of green infrastructure retrofits in the headwaters of South Ellerbe Creek to help improve water quality and reduce stormwater quantity. Other pilot projects include partnerships with Durham Soil and Water Conservation District and Ellerbe Creek Watershed Association to install rain gardens and cisterns in other locations in the city.

The intent of this project is to build upon the success of previous efforts to install small-scale, green infrastructure-type, stormwater control measures at the residential level. Information from past projects will be used to develop a systematic approach to identify residential locations throughout the City to install rain gardens, cisterns, and downspout disconnections. A strong public outreach component will be included. Other services include monitoring of 230 existing green infrastructure devices, development of bid documents and construction management for up to 50 SCMs, as well as the development of a maintenance and monitoring process.

Issues and Analysis

In February 2010, City Council signed a resolution approving Consensus Principles for the Falls Lake Nutrient Management Strategy (resolution #9707). Through these principles the City committed to achieving nutrient reductions as part of the Falls Lake Nutrient Management Strategy. This project represents an important component of the city's multi-faceted effort to address these requirements and other water quality issues. This project will integrate lessons-learned from previous programs to develop a systematic approach for implementing and monitoring green infrastructure to meet City and Departmental Strategic Plans.

Alternatives
The City is required to treat stormwater from existing development in order to meet the requirements of the Falls Lake Nutrient Management Strategy. In-house development of a program to implement and monitor small-scale, green infrastructure-type, stormwater control measures at the residential level could be accomplished by hiring additional staff. This would involve a large number of additional staff over a very short period of time in order to meet the deadline of the Falls Lake Nutrient Management Strategy.

Financial Impact
This project is budgeted for in the Public Works Capital Improvement Plan project budget for Retrofitting (Organization code 4300L045, Object code 725000, Project code LK109).

SDBE Summary
The Equal Opportunity/Equity Assurance Department reviewed the proposal submitted by Biohabitats, Inc. of Raleigh, NC and have determined that they are in compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting.

SDBE REQUIREMENTS
No MSDBE or WSDBE goals were set.

WORKFORCE STATISTICS
Workforce statistics for Biohabitats, Inc. are as follows:
(Consolidated)

Total Workforce	58	
Total Females	27	(47%)
Total Males	31	(53%)
Black Males	0	(0%)
White Males	30	(52%)
Other Males	1	(2%)
Black Females	0	(0%)
White Females	25	(43%)
Other Females	2	(3%)

Attachments
Draft Professional Services Contract and Scope of Work
Evaluation Criteria from Request for Qualifications